

# Innovation effects of information and communication technologies: Evidence from Canadian firms

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## Datasets used

Workplace and  
Employee Survey

## Policy areas this research can inform

Digital economy and  
society

Science and technology

## Context

This paper offers empirical evidence that Information and Communication Technologies (ICT) significantly boost both product and process innovation across Canadian industries. Using longitudinal data from the Canadian Workplace and Employee Survey (1999–2005), the study finds a positive, significant link between ICT adoption (measured by computer usage) and four types of innovation: new products, improved products, new processes, and improved processes. From a policy standpoint, the findings highlight the value of supporting ICT adoption to drive innovation and productivity. Two mechanisms are identified: (1) direct investment effects via reduced ICT costs, and (2) indirect spillover effects through organizational and knowledge transformation.

## Key finding

This paper provides robust empirical evidence that Information and Communication Technologies (ICT) significantly promote both product and process innovations across Canadian industries.

## Policy implications

The paper advocates for policies that promote ICT investment across firms of all sizes, especially smaller firms that gain substantially from process innovation. It emphasizes the need for training and upskilling programs, given human capital's complementary role in ICT-driven innovation. Supporting organizational changes — such as decentralization, job rotation, and flexible work — further amplifies ICT's impact. Enhancing ICT infrastructure and accessibility is key to generating broader spillover effects, particularly in digitally lagging sectors. Importantly, the paper urges public investment in ICT infrastructure and digital literacy to foster private innovation and deliver social benefits, a priority underscored by ICT's role during the COVID-19 pandemic.

## Read the full article here

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